

Modelling and Analysis of Active Biopotential Signals in Healthcare, Volume 1

CHAPTER 6

Noise removal and classification of EEG signals using the Fourier decomposition method

Virender Kumar Mehla¹, Ashish Kumar¹, Amit Singhal¹ and Pushpendra Singh²

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Chapter information

Abstract

In this chapter, an efficient approach based on the Fourier decomposition method (FDM) is proposed for noise removal and classification of epileptic and healthy electroencephalogram (EEG) signals. This work is composed of three main steps. In the first, preprocessing of the EEG signal is performed to remove noise or artifacts present in EEG recordings. In the second step, the FDM is utilized to fragment non-stationary data into a set of orthogonal basis functions known as Fourier intrinsic band functions (FIBFs). In the third step, FIBF based features are extracted and fed to various models for the accurate classification of EEG signals.

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